EPA/PWS/89-045

GROUNDWATER QUALITY PROTECTION PROGRAM:

FORREST
FACILITY NUMBER 1050450
WELL SITE SURVEY REPORT

Presented by:

Division of Public Water Supplies

Published by:

Illinois Environmental Protection Agency

Springfield, Illinois

March, 1989

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INTRODUCTION

This report has been prepared by the Agency pursuant to Section 17.1 of the Illinois Environmental Protection Act. The report summarizes information about your facility and samples collected and analyzed from your well(s). The well site survey provides an inventory of the area around the well(s) to help increase your awareness of potential hazards to groundwater utilized by your facility. This information and technical data will assist you in developing and implementing local groundwater protection measures authorized by the Act.

FACILITY DESCRIPTION AND GEOLOGIC PROFILE OF WELL SITES

The Village of Forrest obtains its water from two public water wells. These wells supply an average of 135,000 gallons per day (gpd) to 1,240 services. Well #1 is the main supply and Well #3 is a backup. Well #2 has not been in use for several years. Sand has filled in the well screen. The well seal has been removed. The old motor was placed on top of the casing but it does not seal it. Table I provides a description of each well as follows;

Table I

	Minimum Setback (ft.)	Maximum Setback (ft.)	Status	Capacity (gpm) (MGD)	Specific Capacity (gpm/ft.)	Treatment	Aquifer	Well Depth (ft.)	Well Logs Available
Well #1				350		Aer., Filt.)	Sand &		
(IEPA #47505)	400	No	A	0.504		Chl., Fl.	Gravel	114	
Well #2									
(IEPA #47506			B				Same	102	
Well #3				270					
(IEPA #47507	400	No	SB	0.389	10.5	Same	Same	105	

I - Inactive SB - Standby
A - Active
B - Abandoned

Both active wells utilize an unconsolidated sand and gravel aquifer. The surficial geologic susceptibility rating (permeability rating) for Well 1 is AX. The sand and gravel aquifer is overlain by alluvial sediments with moderate to high permeability. The rating for Well 3 is B1. The sand and gravel aquifer is overlain by low permeability glacial till which in turn is overlain by high permeability sand and gravel sediments. Permeability is a measure of the ability of a soil or sediment to transmit fluids. A detailed description and geologic profile is found in the Facility Wells Report (Appendix C).

Normal groundwater flow is estimated to be from northeast to southwest, towards the Vermillion River. However, flow direction may be influenced by pumping wells.

GROUNDWATER SAMPLING AND MONITORING HISTORY

Forrest Wells #1 and 3 were sampled on March 27, 1986 as part of a Statewide Groundwater Monitoring Program. The samples were analyzed for volatile organic/aromatic compounds (VOC/VOA) and inorganic chemicals (IOC). In addition, Well #3 was sampled for synthetic organic pesticides (SOC).

VOC/VOA analyses performed did not detect quantifiable levels of any volatile organic/aromatic compounds. IOC analyses indicate that parameters are consistent with other sand and gravel aquifers in Illinois. Initial SOC analyses did not detect any pesticides. However, followup sampling of Well #3 as part of a Special Pesticide Study indicated low levels of chlordane. Subsequent quarterly testing of Well #3 has failed to confirm the presence of any synthetic organic pesticides. Detailed analytical results are found in Appendix D, information on chlordane can be found in Appendix E.

SURVEY METHODS AND PROCEDURES

The detailed well site survey consists of an aerial photographic map and inventory that relate information about potential contamination sources, routes, and possible problem sites to public water supply well(s). The location of potential sources, routes, possible problem sites, minimum setback zones and the 1,000 foot survey area are all displayed on the aerial photographic map (Appendix B).

The first page of each survey consists of a summary description and geologic profile for the well. The second and following pages of the survey inventory units within and bordering a 1,000 foot radius of the wellhead. A unit is defined as "any device, mechanism, equipment, or area (exclusive of land utilized only for agricultural production)" (See Groundwater Primer pg. 19). The Agency 5-digit well number is associated with a map code or unit, and then classified. The classification codes relate to definitions of potential contamination sources and routes as defined in the Illinois Groundwater Protection Act (Primer pages 18-19). Each unit or map code is then described and associated with an owner/address. The distance and direction from the wellhead is also indicated.

Survey Results and Findings

The Forrest well site field survey was conducted on July 1, 1987 by Wade Boring from the Agency's Springfield Regional Office. Dennis Grear, Forrest's water plant operator, was interviewed during a previous sampling visit. The following describes the results and findings for the Forrest public water supply wells.

Forrest Well #1 (IEPA #47505)

The survey area is rural. The area is a mixture of row crops and woodland along the South Fork of the Vermillion River and is subject to flooding. There is one possible problem site located within 1,000 feet of Well #1. This is an improperly abandoned public water well (map code 1) located 700 ft. E. of the wellhead.

Forrest Well #3 (IEPA #47507)

The survey area is rural. The area is a mixture of row crops and woodland along the South Fork of the Vermillion River and is subject to flooding. There is one potential route located near Well #3. This is an improperly abandoned public water well (map code 1) 150 ft. SW of the wellhead.

SUMMARY

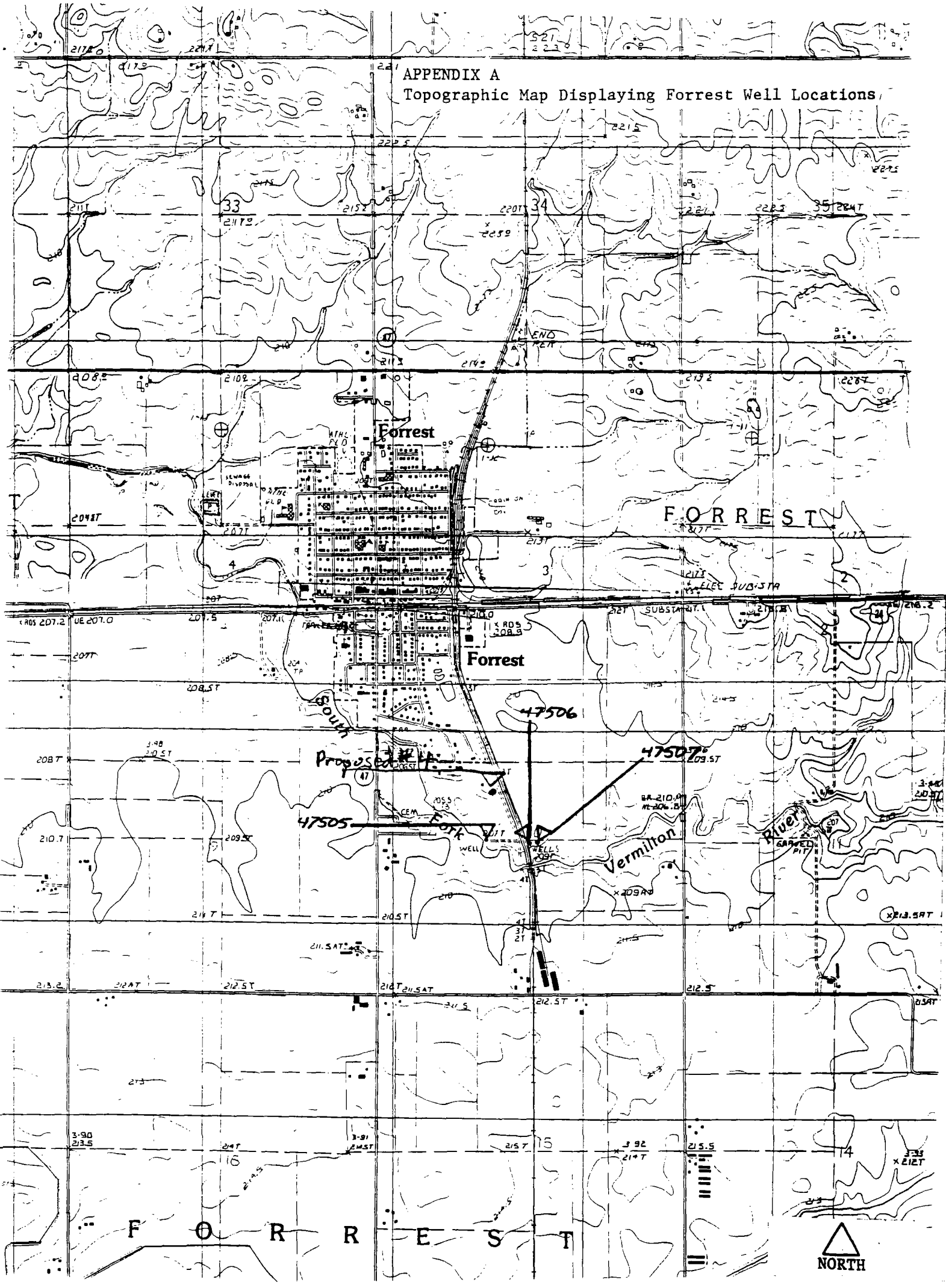
There appear to be no potential sources within 1,000 feet of the Forrest public water wells which could impact groundwater. Quarterly samples are being taken to confirm or disprove the presence of any pesticides in the groundwater. It should be noted that there is an agricultural chemical facility and a small quantity hazardous waste generator located approximately 2,000 ft. S of the Forrest public water wells. Well #2 should be retrofitted for use or properly abandoned. Inactive wells which are improperly abandoned are considered potential routes according to the Illinois Environmental Protection Act and could provide an entryway for contaminants into the aquifer.

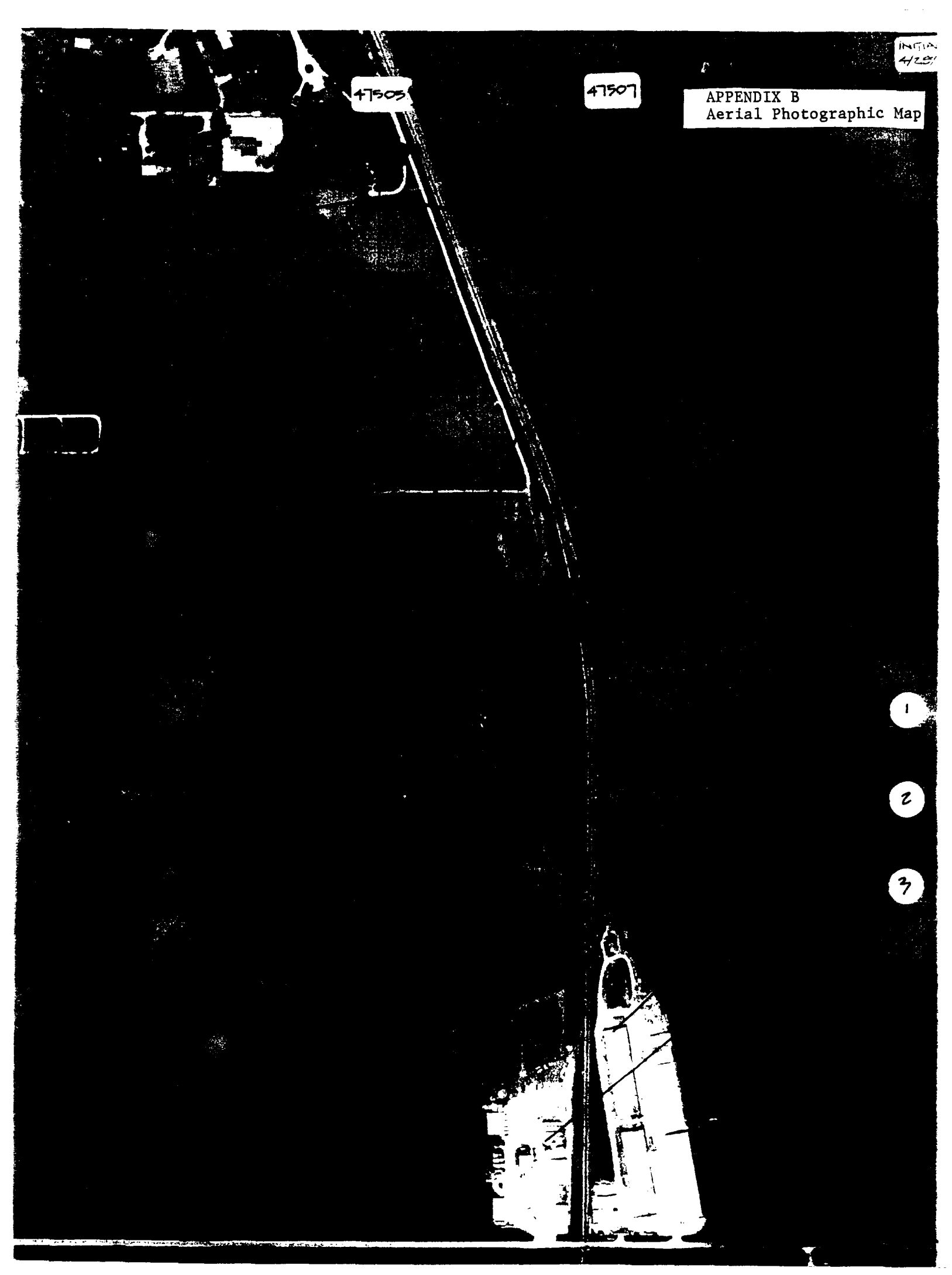
The Illinois Environmental Protection Act provides minimum protection zones for your wells. These minimum protection zones are regulated by the IEPA. The Act also authorizes county and municipal officials the opportunity to provide maximum protection zones up to 1,000 feet. The responsibility for the controls would then be assumed by local officials through adoption of a maximum setback zone ordinance.

TECHNICAL APPENDICES

APPENDIX A

Topographic Map Displaying Forrest Well Locations




47505
47507
APPENDIX B
Aerial Photographic Map
1
2
3

APPENDIX: B1- Forrest Well #1 (IEPA #47505) WELL SITE SURVEY SUMMARY DESCRIPTION AND GEOLOGIC PROFILE

SURVEYOR: W. Boring
SURVEY DATE: 7-1-87

ADDRESS:
Village Hall
209 E. Krach St.
Forrest, Illinois 61714

AGENCY WELL NO: 47505
WELL NAME & DESC.: Well 1
TREATMENT APPLICATION POINT: 01
FACILITY NO. & NAME: 1050450 Forrest
FAC. PHONE NUMBER: 815/657-8242
LOCATION:
TWP, RNG, SECTION, 10 ACRE PLOT:
26N, 7E, 10, 6E
DISTANCE FROM CORNER: 2610 S, 1500E
QUAD SHEET CODE & NAME: 113B Forrest South
MIN. SETBACK: 400 ft.
MAX. SETBACK:
SURFICIAL GEOLOGIC SUSCEPTIBILITY RATING: AX-alluvial sand and gravel sediments
AGE OF WELL (DATE WELL CONSTRUCTION): 1935
WELL DEPTH: 114 ft.
AQUIFER CODE: 0101 - sand and gravel aquifer
MULTIPLE AQUIFER (Y, N): No
SUMMARY DESCRIPTION OF 1,000' RADIUS AREA: Survey area is rural. Area is a mixture of row crops and woodland along the South Fork of the Vermillion River and is subject to flooding.
INTERVIEW(S) NAME-ADDRESS-AFFILIATION-TELEPHONE NO.:
Dennis Grear, 120 E. John, Forrest, IL 61714
Water Plant Operator, 815/657-8115

WB:rmi/0311k/sp, 7

APPENDIX: B1-Forrest Well #1 (IEPA #47505) INVENTORY AND SYNOPSIS OF UNITS

*CLASSF KEY

MIN. ZONE	OUTSIDE MIN. ZONE
PP = POTENTIAL PRIMARY	OP = POTENTIAL PRIMARY
PS = POTENTIAL SECONDAY	OS = POTENTIAL SECONDARY
RI = POTENTIAL ROUTE	OR = POTENTIAL ROUTE
CC = CERTIFIED	CC = CERTIFIED
XX = UNKNOWN	OX = UNKNOWN
CU = CLEANUP	CU = CLEANUP

WELL NO. - MAP CODE - CLASSF*: 47505-01-OR
NAME & ADDRESS OF UNIT OWNER: Village of Forrest, Village Hall,
Forrest, Illinois 61714
DESCRIPTION AND COMMENTS: Inactive public water well (IEPA #47506)
PRE OR POST (Y,N): Y
DISTANCE AND DIRECTION: 700 ft. E.

WELL NO. - MAP CODE - CLASSF*: 47505-02
NAME & ADDRESS OF UNIT OWNER: Hagar Wood Preserving, P.O. Box 90
Forrest, Illinois 61714 815/657-8281
DESCRIPTION AND COMMENTS: Wood treating and waterproofing, small quantity hazardous waste generator
PRE OR POST (Y,N): Y
DISTANCE AND DIRECTION: 2000 Ft. SE

WELL NO. - MAP CODE - CLASSF*: 47505-03
NAME & ADDRESS OF UNIT OWNER: Livingston Service Co., Forrest TWP
Forrest, Illinois 61714 815/657-8287
DESCRIPTION AND COMMENTS: ag-chem facility, above ground storage of liquid and dry fertilizers and pesticides.
PRE OR POST (Y,N): Y
DISTANCE AND DIRECTION: 2220 ft. SE

WB:rm1/0311k/sp, 8

APPENDIX: B2-Forrest Well #3 (IEPA #47507) WELL SITE SURVEY SUMMARY DESCRIPTION AND GEOLOGIC PROFILE

SURVEYOR: W. Boring
SURVEY DATE: 7-1-87

ADDRESS:
Village Hall
209 E. Krach St.
Forrest, Illinois 61714

AGENCY WELL NO: 47507
WELL NAME & DESC.: Well 3
TREATMENT APPLICATION POINT: 01
FACILITY NO. & NAME: 1050450 Forrest
FAC. PHONE NUMBER: 815/657-8242
LOCATION:
TWP, RNG, SECTION, 10 ACRE PLOT:
26N, 7E, 10, 4D
DISTANCE FROM CORNER: 2580N, 2500W
QUAD SHEET CODE & NAME: 113B Forrest South
MIN. SETBACK: 400 ft.
MAX. SETBACK:
SURFICIAL GEOLOGIC SUSCEPTIBILITY RATING: B1-sand and gravel overlaying low permeability till.
AGE OF WELL (DATE WELL CONSTRUCTION): 1926
WELL DEPTH: 105
AQUIFER CODE: 0101-sand and gravel aquifer
MULTIPLE AQUIFER (Y, N): No
SUMMARY DESCRIPTION OF 1,000' RADIUS AREA: Survey area is rural. The area is a mixture of row crops and woodland along the South Fork of the Vermillion River and is subject to flooding.
INTERVIEW(S) NAME-ADDRESS-AFFILIATION-TELEPHONE NO.:
Dennis Grear, 120 E. John, Forrest, Illinois 61714 Water Plant Operator, 815/657-8115

WB:rmi/0311k/sp, 9

APPENDIX: B2-Forrest Well #3 (IEPA #47507) INVENTORY AND SYNOPSIS OF UNITS

*CLASSF KEY

MIN. ZONE	OUTSIDE MIN. ZONE
PP = POTENTIAL PRIMARY	OP = POTENTIAL PRIMARY
PS = POTENTIAL SECONDAY	OS = POTENTIAL SECONDARY
RI = POTENTIAL ROUTE	OR = POTENTIAL ROUTE
CC = CERTIFIED	CC = CERTIFIED
XI = UNKNOWN	OX = UNKNOWN
CU = CLEANUP	CU = CLEANUP

WELL NO. - MAP CODE - CLASSF*: 47507-01-RI
NAME & ADDRESS OF UNIT OWNER: Village of Forrest, Village Hall,
Forrest, Illinois 61714 815/657-8242
DESCRIPTION AND COMMENTS: inactive public water well (IEPA #45706)
PRE OR POST (Y,N): Y
DISTANCE AND DIRECTION: 150 Ft. SW

WELL NO. - MAP CODE - CLASSF*: 47507-02
NAME & ADDRESS OF UNIT OWNER: Hagar Wood Preserving, P.O. Box 90
Forrest, Illinois 61714 815/657-8281
DESCRIPTION AND COMMENTS: wood treating and preserving, small quantity hazardous waste generator
PRE OR POST (Y,N): Y
DISTANCE AND DIRECTION: 1850 ft. S

WELL NO. - MAP CODE - CLASSF*: 47507-03
NAME & ADDRESS OF UNIT OWNER: Livingston Service Co., Forrest TWP
Forrest, Illinois 61714 815/657-8287
DESCRIPTION AND COMMENTS: ag-chem facility, above ground storage of liquid and dry fertilizers and pesticides
PRE OR POST (Y,N): Y
DISTANCE AND DIRECTION: 2100 ft. SW

WB:rmi/0311k/sp, 10

APPENDIX C

FACILITY: 1050450 FORREST

---------- OWNER ----------

RICHARD SANDERS

VILLAGE HALL

209 E. KRACH ST.

FORREST IL 61741

---------- OFFICIAL CUSTODIAN ----------

WELL: 47505 WELL 1 IS ON EAST BANK OF RIVER STATUS: ACTIVE DEPTH(FT): 114
LATITUDE: N40 44 23.0 LONGITUDE: W088 24 25.0 TWP: 26N RNG: 07E SEC: 10 PLOT: 6E

SUSCEPTIBILITY - LAND BURIAL: AX SUSCEPTIBILITY - LAND SPREADING: --- MINIMUM SETBACK(FT): 0400 ---
AQUIFERS: QUATERNARY SYSTEM

WELL: 47506 WELL 2 WEST OF 2 WELLS EAST OF RR TRACKS STATUS: INACTIVE* DEPTH(FT): 102
LATITUDE: N40 44 13.5 LONGITUDE: W088 24 03.0 TWP: 26N RNG: 07E SEC: 10 PLOT: 4D

SUSCEPTIBILITY - LAND BURIAL: B1 SUSCEPTIBILITY - LAND SPREADING: --- MINIMUM SETBACK(FT): 400* ---

WELL: 47507 WELL 3 EAST OF 2 WELLS EAST OF RR TRACKS STATUS: ACTIVE BACKUP DEPTH(FT): 105
LATITUDE: N40 44 13.5 LONGITUDE: W088 23 59.0 TWP: 26N RNG: 07E SEC: 10 PLOT: 4D

SUSCEPTIBILITY - LAND BURIAL: B1 SUSCEPTIBILITY - LAND SPREADING: --- MINIMUM SETBACK(FT): 0400 ---

SUSCEPTIBILITY CODES
LAND BURIAL: AX = ALLUVIUM, A MIXTURE OF GRAVEL, SAND, SILT, AND CLAY ALONG STREAMS, VARIABLE IN COMPOSITION AND THICKNESS.
B1 = SAND AND GRAVEL LESS THAN 20 FT THICK OVER RELATIVELY IMPERMEABLE TILL OR BEDROCK.

*NOTE: INACTIVE WELLS SHOULD EITHER BE RETROFITTED FOR USE OR PROPERLY ABANDONED. INACTIVE WELLS WHICH ARE IMPROPERLY ABANDONED ARE CONSIDERED POTENTIAL ROUTES ACCORDING TO P.A. 85-0863.

APPENDIX D

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF PUBLIC WATER SUPPLIES
SELECTED SAMPLE EXPANDED REPORT

FACILITY: 1050450 FORREST STATUS: A PUBLIC: Y COMM: Y TYPE WATER: G
TAP: 01 PLANT ON SOUTH WILLIAMS ST EAST OF RT 47 STATUS: A
RAW SRCE: 47505 WELL 1 IS ON EAST BANK OF RIVER STATUS: A

SAMPLE NO: Z001906 LOCATION: WELL
SMPL TYPE: RAW COLLECTOR: IEPA SMPL COLLECTOR
SMPL PURP: 5-SPEC/OTHR COMMENTS:
SMPL PROG: B-GWM PEST OBSRVATNS:

COLL DATE: 07/01/87 DELIVERED BY:
LAB RCVD: 00/00/00 RECEIVED BY:
LAB COMPL: 00/00/00 LAB SUPERVISOR:
SMPL PERIOD: 07/87 FUND CODE:

ANALYSIS ID	RSLT NO	STORET NO	DESCRIPTION	UNITS	RESULT	STANDARDS DRINK WTR	STANDARDS RAW WTR	TRIGGER LEVEL
0000001	001	39023	PHORATE UG/L		0.050 <			
0000001	002	39300	P,P'-DDT UG/L		0.010 <			
0000001	003	39305	O,P'-DDT UG/L		0.010 <			
0000001	004	39310	P,P'-DDD UG/L		0.010 <			
0000001	005	39315	O,P'-DDD UG/L		0.010 <			
0000001	006	39320	P,P'-DDE UG/L		0.010 <			
0000001	007	39327	O,P'-DDE UG/L		0.010 <			
0000001	008	39330	ALDRIN UG/L		0.010 <	1.000		
0000001	009	39340	LINDANE UG/L		0.010 <	4.000		
0000001	010	39356	METOLACHLOR (DUAL) UG/L		0.100 <			
0000001	011	39330	DIELDRIN UG/L		0.010 <	1.000		
0000001	012	39390	ENDRIN UG/L		0.010 <	0.200		
0000001	013	39398	ETHION UG/L		0.050 <			
0000001	014	39400	TOXAPHENE UG/L		1.000 <	5.000		
0000001	015	39410	HEPTACHLOR UG/L		0.010 <	0.100		
0000001	016	39420	HEPTACHLOR EPOXIDE UG/L		0.010 <	0.100		
0000001	017	39480	METHOXYCHLOR UG/L		0.050 <	100.000		
0000001	018	39516	TOTAL PCB'S UG/L		0.100 <			
0000001	019	39530	MALATHION UG/L		0.050 <			
0000001	020	39570	DIAZINON UG/L		0.050 <			
0000001	021	39600	METHYL PARATHION UG/L		0.050 <			
0000001	022	39630	ATRAZINE (AATREX) UG/L		0.050 <			
0000001	023	39730	2,4-D UG/L		0.100 <	10.000		
0000001	024	39760	SILVEX UG/L		0.050 <	10.000		
0000001	025	39810	GAMMA CHLORDANE UG/L		0.010 <			
0000001	026	77825	ALACHLOR UG/L		0.020 <			
0000001	027	81294	DYFONATE UG/L		0.050 <			
0000001	028	81403	DURSBAN UG/L		0.050 <			
0000001	029	81757	CYANAZINE UG/L		0.050 <			
0000001	030	82088	TERBUFOS (COUNTER) UG/L		0.050 <			

SAMPLE NO: 8605434 LOCATION: WELL #1
SMPL TYPE: RAW COLLECTOR: NO NAME
SMPL PURP: 1-ROUTINE COMMENTS:
SMPL PROG: I-GWM INORG OBSRVATNS:

COLL DATE: 04/18/86 DELIVERED BY:
LAB RCVD: 05/28/86 RECEIVED BY:
LAB COMPL: LAB SUPERVISOR:
SMPL PERIOD: 04/86 FUND CODE:

FACILITY: 1050450 FORREST *** CONTINUED ***

ANALYSIS ID	RSLT NO	STORET DESCRIPTION	UNITS	RESULT	STANDARDS DRINK WTR	STANDARDS RAW WTR	TRIGGER LEVEL
	00095	CONDUCTIVITY(EC)-LAB(UMHOS/CM @ 25 C		880.000			
	00403	PH LABORATORY UNITS		7.500			
	00410	ALKALINITY,TOTAL MG/L AS CACO3		499.000			
	00610	NITROGEN,AMMONIA TOTAL MG/L AS N		5.400			
	00630	NITRATE & NITRITE TOTAL MG/L AS N		0.100 <	10.000		
	00720	CYANIDE,TOTAL MG/L AS CN		0.005 <	0.200		
	00900	HARDNESS,EDTA MG/L AS CACO3		374.000			
	00916	CALCIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP		81.000			
	00927	MAGNESIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP		40.300			
	00929	SODIUM,TOTAL RECOVERABLE MG/L AS NA ANAL BY ICP		55.000			
	00937	POTASSIUM,TOTAL RECOVERABLE MG/L AS K ANAL BY ICP		2.300			
	00940	CHLORIDE,TOTAL MG/L AS CL		5.900			
	00945	SULFATE,TOTAL MG/L AS SO4		10.000 <			
	00951	FLUORIDE,TOTAL MG/L AS F		0.540	4.000		
	00956	SILICA,TOTAL MG/L AS SIO2		17.000			
	01002	ARSENIC,TOTAR RECOVERABLE UG/L AS AS		2.000	50.000		
	01007	BARIUM,TOTAL RECOVERABLE UG/L AS BA ANAL BY ICP		265.000	1000.000		
	01012	BERYLLIUM,TOTAL RECOVERABLE UG/L AS BE ANAL BY ICP		0.500 <			
	01022	BORON,TOTAL RECOVERABLE UG/L AS B ANAL BY ICP		260.000			
	01027	CADMIUM,TOTAL RECOVERABLE UG/L AS CD ANAL BY ICB		3.000 <	10.000		
	01034	CHROMIUM,TOTAL RECOVERABLE UG/L ASCR ANAL BY ICB		5.000 <	50.000		
	01037	COBALT,TOTAL RECOVERABLE UG/L AS CO ANAL BY ICP		5.000 <			
	01042	COPPER,TOTAL RECOVERABLE UG/L AS CU ANAL BY ICP		3.000 <	5000.000		
	01045	IRON,TOTAL RECOVERABLE, UG/L AS FEANAL BY ICP		3000.000	1000.000*		
	01051	LEAD,TOTAL RECOVERABLE UG/L AS PB		5.000 <	50.000		
	01055	MANGANESE,TOTAL RECOVERABLE UG/L AS MN ANAL BY ICP		33.000	150.000		
	01067	NICKEL,TOTAL RECOVERABLE UG/L AS NI ANAL BY ICP		3.000 <			
	01077	SILVER,TOTAL RECOVERABLE UG/L AS AG ANAL BY ICP		5.000 <	50.000		
	01082	STRONTIUM,TOTAL RECOVERABLE UG/L AS SR ANAL BY ICP		690.000			
	01087	VANADIUM,TOTAL RECOVERABLE UG/L ASV ANAL BY ICP		4.000 <			
	01092	ZINC,TOTAL RECOVERABLE UG/L AS ZN ANAL BY ICP		2.000 <	5000.000		
	01105	ALUMINUM,TOTAL RECOVERABLE UG/L ASAL ANAL BY ICP		10.000			
	01147	SELENIUM,TOTAL RECOVERABLE UG/L ASSE		1.000 <	10.000		
	70300	RESIDUE,TOTAL FILTERABLE @180 C,MG/L		491.000			
	70304	TOTAL DISSOLVED SOLIDS MG/L BY EC		530.000			
	71900	MERCURY,TOTAL UG/L AS HG		0.010 <	2.000		

SAMPLE NO: Z001905 LOCATION: WELL COLL DATE: 03/27/86 DELIVERED BY:
SMPL TYPE: RAW COLLECTOR: IEPA SMPL COLLECTOR *LAB RCVD: 00/00/00* RECEIVED BY:
SMPL PURP: 5-SPEC/OTHR COMMENTS: LAB COMPL: 00/00/00 LAB SUPERVISOR:
SMPL PROG: I-GWM INORG OBSRVATNS: SMPL PERIOD: 03/86 FUND CODE:

ANALYSIS ID	RSLT NO	STORET NO	DESCRIPTION	UNITS	RESULT	STANDARDS DRINK WTR	STANDARDS RAW WTR	TRIGGER LEVEL
0000001	001	00610	NITROGEN,AMMONIA TOTAL MG/L AS N		4.600			
0000001	002	00630	NITRATE & NITRITE TOTAL MG/L AS N		0.100 <	10.000		

FACILITY: 1050450 FORREST *** CONTINUED ***

0000001	003	00665	PHOSPHORUS, TOTAL MG/L AS P	0.410		
0000001	004	00720	CYANIDE,TOTAL MG/L AS CN	0.010	<	0.200
0000001	005	00916	CALCIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP	83.000		
0000001	006	00927	MAGNESIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP	40.000		
0000001	007	00929	SODIUM,TOTAL RECOVERABLE MG/L AS NA ANAL BY ICP	61.000		
0000001	008	00937	POTASSIUM,TOTAL RECOVERABLE MG/L AS K ANAL BY ICP	2.400		
0000001	009	00940	CHLORIDE,TOTAL MG/L AS CL	5.300		
0000001	010	00945	SULFATE,TOTAL MG/L AS SO4	10.000	<	
0000001	011	00951	FLUORIDE,TOTAL MG/L AS F	0.380		4.000
0000001	012	00956	SILICA,TOTAL MG/L AS S102	17.000		
0000001	013	00956	SILICA,TOTAL MG/L AS S102	17.000		
0000001	014	01002	ARSENIC,TOTAR RECOVERABLE UG/L AS AS	2.000		50.000
0000001	015	01007	BARIUM,TOTAL RECOVERABLE UG/L AS BA ANAL BY ICP	288.000		1000.000
0000001	016	01012	BERYLLIUM,TOTAL RECOVERABLE UG/L AS BE ANAL BY ICP	0.500	<	
0000001	017	01022	BORON,TOTAL RECOVERABLE UG/L AS B ANAL BY ICP	238.000		
0000001	018	01027	CADMIUM,TOTAL RECOVERABLE UG/L AS CD ANAL BY ICB	3.000	<	10.000
0000001	019	01034	CHROMIUM,TOTAL RECOVERABLE UG/L ASCR ANAL BY ICB	5.000	<	50.000
0000001	020	01037	COBALT,TOTAL RECOVERABLE UG/L AS CO ANAL BY ICP	5.000	<	
0000001	021	01042	COPPER,TOTAL RECOVERABLE UG/L AS CU ANAL BY ICP	5.000	<	5000.000
0000001	022	01045	IRON,TOTAL RECOVERABLE, UG/L AS FEANAL BY ICP	3075.000		1000.000*
0000001	023	01051	LEAD,TOTAL RECOVERABLE UG/L AS PB	5.000	<	50.000
0000001	024	01055	MANGANESE,TOTAL RECOVERABLE UG/L AS MN ANAL BY ICP	33.000		150.000
0000001	025	01067	NICKEL,TOTAL RECOVERABLE UG/L AS NI ANAL BY ICP	5.000	<	
0000001	026	01077	SILVER,TOTAL RECOVERABLE UG/L AS AG ANAL BY ICP	3.000	<	50.000
0000001	027	01082	STRONTIUM,TOTAL RECOVERABLE UG/L AS SR ANAL BY ICP	783.000		
0000001	028	01087	VANADIUM,TOTAL RECOVERABLE UG/L ASV ANAL BY ICP	5.000	<	
0000001	029	01092	ZINC,TOTAL RECOVERABLE UG/L AS ZN ANAL BY ICP	50.000	<	5000.000
0000001	030	01105	ALUMINUM,TOTAL RECOVERABLE UG/L ASAL ANAL BY ICP	50.000	<	
0000001	031	01147	SELENIUM,TOTAL RECOVERABLE UG/L ASSE	1.000	<	10.000
0000001	032	32730	PHENOLS, TOTAL RECOVERABLE UG/L	5.000	<	
0000001	033	70300	RESIDUE,TOTAL FILTERABLE @180 C,MG/L	479.000		
0000001	034	71900	MERCURY,TOTAL UG/L AS HG	0.010	<	2.000
0000001	035	00059	FLOW (PUMPING) RATE GAL/MIN	350.000		
0000001	036	72004	FLOW (PUMPING) TIME PRIOR TO SAMPLING MIN	30.000		
0000001	037	90410		503.000		

SAMPLE NO: Z001904 LOCATION: WELL
SMPL TYPE: RAW COLLECTOR: IEPA SMPL COLLECTOR
SMPL PURP: 5-SPEC/OTHR COMMENTS:
SMPL PROG: V-VOC OBSRVATNS:

COLL DATE: 03/27/86 DELIVERED BY:
LAB RCVD: 00/00/00 RECEIVED BY:
LAB COMPL: 00/00/00 LAB SUPERVISOR:
SMPL PERIOD: 03/86 FUND CODE:

ANALYSIS ID	RSLT NO	STORET NO	DESCRIPTION	UNITS	RESULT		STANDARDS DRINK WTR	STANDARDS RAW WTR	TRIGGER LEVEL
0000001	001	32101	BROMODICHLOROMETHANE UG/L CG/MS		1.000	<			
0000001	002	32102	CARBON TETRACHLORIDE UG/L CG/MS		1.000	<	5.000		
0000001	003	32103	1,2-DICHLOROETHANE UG/L		1.000	<	5.000		
0000001	004	32104	BROMOFORM UG/L CG/MS		1.000	<			
0000001	005	32105	DIBROMOCHLOROMETHANE UG/L GC/MS		1.000	<			
0000001	006	32106	CHLOROFORM UG/L GC/MS		1.000	<			

FACILITY: 1050450 FORREST *** CONTINUED ***

0000001	007	34010	TOLUENE UG/L	1.000	<	
0000001	008	34030	BENZENE UG/L	1.000	<	5.000
0000001	009	34301	CHLOROBENZENE UG/L	1.000	<	
0000001	010	34371	ETHYLBENZENE UG/L	1.000	<	
0000001	011	34423	METHYLENE CHLORIDE UG/L	1.000	<	
0000001	012	34475	TETRACHLOROETHYLENE UG/L GC/MS	1.000	<	
0000001	013	34496	1,1-DICHLOROETHANE UG/L GC/MS	1.000	<	
0000001	014	34501	1,1-DICHLOROETHYLENE UG/L GC/MS	1.000	<	7.000
0000001	015	34506	1,1,1-TRICHLOROETHANE UG/L GC/MS	1.000	<	200.000
0000001	016	39180	TRICHLOROETHYLENE UG/L	1.000	<	5.000
0000001	017	00059	FLOW (PUMPING) RATE GAL/MIN	350.000		
0000001	018	72004	FLOW (PUMPING) TIME PRIOR TO SAMPLING MIN	30.000		
0000001	019	90410		503.000		

FACILITY: 1050450 FORREST STATUS: A PUBLIC: Y COMM: Y TYPE WATER: G
TAP: 01 PLANT ON SOUTH WILLIAMS ST EAST OF RT 47 STATUS: A
RAW SRCE: 47506 WELL 2 WEST OF 2 WELLS EAST OF RR TRACKS STATUS: I

SAMPLE NO: B039430 LOCATION: WELL #2 COLL DATE: 03/24/82 DELIVERED BY:
SMPL TYPE: RAW COLLECTOR: D W GREEAR LAB RCVD: 05/10/82 RECEIVED BY:
SMPL PURP: 1-ROUTINE COMMENTS: LAB COMPL: LAB SUPERVISOR:
SMPL PROG: I-GWM INORG OBSRVATNS: SMPL PERIOD: 03/82 FUND CODE:

ANALYSIS ID	RSLT NO	STORET NO	DESCRIPTION	UNITS	RESULT		STANDARDS DRINK WTR	STANDARDS RAW WTR	TRIGGER LEVEL
		00095	CONDUCTIVITY(EC)-LAB(UMHOS/CM @ 25 C		970.000				
		00403	PH LABORATORY UNITS		7.200				
		00410	ALKALINITY,TOTAL MG/L AS CACO3		580.000				
		00610	NITROGEN,AMMONIA TOTAL MG/L AS N		9.100				
		00630	NITRATE & NITRITE TOTAL MG/L AS N		0.140		10.000		
		00720	CYANIDE,TOTAL MG/L AS CN		0.005	<	0.200		
		00900	HARDNESS,EDTA MG/L AS CACO3		387.000				
		00916	CALCIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP		87.000				
		00927	MAGNESIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP		44.500				
		00929	SODIUM,TOTAL RECOVERABLE MG/L AS NA ANAL BY ICP		71.000				
		00937	POTASSIUM,TOTAL RECOVERABLE MG/L AS K ANAL BY ICP		3.300				
		00940	CHLORIDE,TOTAL MG/L AS CL		5.900				
		00945	SULFATE,TOTAL MG/L AS SO4		10.000	<			
		00951	FLUORIDE,TOTAL MG/L AS F		0.370		4.000		
		00956	SILICA,TOTAL MG/L AS SIO2		18.000				
		01002	ARSENIC,TOTAR RECOVERABLE UG/L AS AS		1.000		50.000		
		01007	BARIUM,TOTAL RECOVERABLE UG/L AS BA ANAL BY ICP		390.000		1000.000		
		01012	BERYLLIUM,TOTAL RECOVERABLE UG/L AS BE ANAL BY ICP		0.500	<			
		01022	BORON,TOTAL RECOVERABLE UG/L AS B ANAL BY ICP		300.000				
		01027	CADMIUM,TOTAL RECOVERABLE UG/L AS CD ANAL BY ICB		3.000	<	10.000		
		01034	CHROMIUM,TOTAL RECOVERABLE UG/L ASCR ANAL BY ICB		5.000	<	50.000		
		01037	COBALT,TOTAL RECOVERABLE UG/L AS CO ANAL BY ICP		5.000	<			
		01042	COPPER,TOTAL RECOVERABLE UG/L AS CU ANAL BY ICP		17.000		5000.000		
		01045	IRON,TOTAL RECOVERABLE, UG/L AS FEANAL BY ICP		7130.000		1000.000*		

FACILITY: 1050450 FORREST *** CONTINUED ***

01051	LEAD,TOTAL RECOVERABLE UG/L AS PB	5.000 <	50.000
01055	MANGANESE,TOTAL RECOVERABLE UG/L AS MN ANAL BY ICP	46.000	150.000
01067	NICKEL,TOTAL RECOVERABLE UG/L AS NI ANAL BY ICP	3.000 <	
01077	SILVER,TOTAL RECOVERABLE UG/L AS AG ANAL BY ICP	5.000 <	50.000
01082	STRONTIUM,TOTAL RECOVERABLE UG/L AS SR ANAL BY ICP	680.000	
01087	VANADIUM,TOTAL RECOVERABLE UG/L ASV ANAL BY ICP	4.000 <	
01092	ZINC,TOTAL RECOVERABLE UG/L AS ZN ANAL BY ICP	2.000 <	5000.000
01147	SELENIUM,TOTAL RECOVERABLE UG/L ASSE	1.000 <	10.000
70300	RESIDUE,TOTAL FILTERABLE @180 C,MG/L	521.000	
70304	TOTAL DISSOLVED SOLIDS MG/L BY EC	580.000	
71900	MERCURY,TOTAL UG/L AS HG	0.050 <	2.000

FACILITY: 1050450 FORREST STATUS: A PUBLIC: Y COMM: Y TYPE WATER: G
TAP: 01 PLANT ON SOUTH WILLIAMS ST EAST OF RT 47 STATUS: A
RAW SRCE: 47507 WELL 3 EAST OF 2 WELLS EAST OF RR TRACKS STATUS: A

SAMPLE NO: D86880700 LOCATION: FORREST/WELL 3 COLL DATE: 11/07/88 DELIVERED BY: MAIL
SMPL TYPE: RAW COLLECTOR: D GREEAR LAB RCVD: 11/09/88 RECEIVED BY: D V
SMPL PURP: 9-VARIANCE COMMENTS: GROUNDWATER PESTICIDE LAB COMPL: 11/29/88 LAB SUPERVISOR: JTH
SMPL PROG: B-GWM PEST OBSRVATNS: 2 QTS WATER SMPL PERIOD: 11/88 FUND CODE: PW30

ANALYSIS ID	RSLT NO	STORET NO	DESCRIPTION	UNITS	RESULT	STANDARDS DRINK WTR	STANDARDS RAW WTR	TRIGGER LEVEL
412WA00	001	39340	LINDANE UG/L	UG/L	0.010 <	4.000		
412WA00	002	39410	HEPTACHLOR UG/L	UG/L	0.010 <	0.100		
412WA00	003	39330	ALDRIN UG/L	UG/L	0.010 <	1.000		
412WA00	004	39420	HEPTACHLOR EPOXIDE UG/L	UG/L	0.010 <	0.100		
412WA00	005	39348	ALPHA CHLORDANE UG/L	UG/L	0.010 <			
412WA00	006	39910	GAMMA CHLORDANE UG/L	UG/L	0.010 <			
412WA00	007	39380	DIELDRIN UG/L	UG/L	0.010 <	1.000		
412WA00	008	39390	ENDRIN UG/L	UG/L	0.010 <	0.200		
412WA00	009	39480	METHOXYCHLOR UG/L	UG/L	0.050 <	100.000		
412WA00	010	39327	O,P'-DDE UG/L	UG/L	0.010 <			
412WA00	011	39320	P,P'-DDE UG/L	UG/L	0.010 <			
412WA00	012	39315	O,P'-DDD UG/L	UG/L	0.010 <			
412WA00	013	39310	P,P'-DDD UG/L	UG/L	0.010 <			
412WA00	014	39305	O,P'-DDT UG/L	UG/L	0.010 <			
412WA00	015	39300	P,P'-DDT UG/L	UG/L	0.010 <			
412WA00		39370	TOTAL DDT UG/L		0.000	50.000		
412WP00	001	39516	TOTAL PCB'S UG/L	UG/L	0.100 <			
412WT00	001	39400	TOXAPHENE UG/L	UG/L	1.000 <	5.000		
418WH00	001	39730	2,4-D UG/L	UG/L	0.100 <	10.000		
418WH00	002	39760	SILVEX UG/L	UG/L	0.050 <	10.000		
418WN00	001	46313	PHORATE UG/L	UG/L	0.050 <			
418WN00	002	39570	DIAZINON UG/L	UG/L	0.050 <			
418WN00	003	39357	RONNEL UG/L	UG/L	0.050 <			
418WN00	004	39600	METHYL PARATHION UG/L	UG/L	0.050 <			
418WN00	005	82088	TERBUFOS (COUNTER) UG/L	UG/L	0.050 <			
418WN00	006	81294	DYFONATE UG/L	UG/L	0.050 <			

FACILITY: 1050450 FORREST *** CONTINUED ***

418WN00	007	81403	DURSBAN UG/L	UG/L	0.050	<
418WN00	008	39530	MALATHION UG/L	UG/L	0.050	<
418WN00	009	39398	ETHION UG/L	UG/L	0.050	<
418WN00	010	81284	TREFLAN UG/L	UG/L	0.010	<
418WN00	011	39630	ATRAZINE (AATREX) UG/L	UG/L	0.050	<
418WN00	012	77825	ALACHLOR UG/L	UG/L	0.020	<
418WN00	013	39356	METOLACHLOR (DUAL) UG/L	UG/L	0.100	<
418WN00	014	81757	CYANAZINE UG/L	UG/L	0.050	<

SAMPLE NO: 086605100 LOCATION: FORREST/WELL 3 COLL DATE: 07/07/88 DELIVERED BY: MAIL
SMPL TYPE: RAW COLLECTOR: D GREEAR LAB RCVD: 07/08/88 RECEIVED BY: MSB
SMPL PURP: 9-VARIANCE COMMENTS: GROUNDWATER PESTICIDE LAB COMPL: 07/19/88 LAB SUPERVISOR: JTH
SMPL PROG: 8-GWM PEST OBSRVATNS: 2 QTS SMPL PERIOD: 07/8[illegible] FUND CODE: PW30

ANALYSIS ID	RSLT NO	STORET NO	DESCRIPTION	UNITS	RESULT	STANDARDS DRINK WTR	STANDARDS RAW WTR	TRIGGER LEVEL
412WA00	001	39340	LINDANE UG/L	UG/L	0.010 <	4.000		
412WA00	002	39410	HEPTACHLOR UG/L	UG/L	0.010 <	0.100		
412WA00	003	39330	ALDRIN UG/L	UG/L	0.010 <	1.000		
412WA00	004	39420	HEPTACHLOR EPOXIDE UG/L	UG/L	0.010 <	0.100		
412WA00	005	39348	ALPHA CHLORDANE UG/L	UG/L	0.010 <			
412WA00	006	39810	GAMMA CHLORDANE UG/L	UG/L	0.010 <			
412WA00	007	39380	DIELDRIN UG/L	UG/L	0.010 <	1.000		
412WA00	008	39390	ENDRIN UG/L	UG/L	0.010 <	0.200		
412WA00	009	39480	METHOXYCHLOR UG/L	UG/L	0.050 <	100.000		
412WA00	010	39327	O,P'-DDE UG/L	UG/L	0.010 <			
412WA00	011	39320	P,P'-DDE UG/L	UG/L	0.010 <			
412WA00	012	39315	O,P'-DDD UG/L	UG/L	0.010 <			
412WA00	013	39310	P,P'-DDD UG/L	UG/L	0.010 <			
412WA00	014	39305	O,P'-DDT UG/L	UG/L	0.010 <			
412WA00	015	39300	P,P'-DDT UG/L	UG/L	0.010 <			
412WA00		39370	TOTAL DDT UG/L		0.000	50.000		
412WP00	001	39516	TOTAL PCB'S UG/L	UG/L	0.100 <			
412WT00	001	39400	TOXAPHENE UG/L	UG/L	1.000 <	5.000		
418WC00	001	39032	PENTACHLOROPHENOL	UG/L	0.010 <			
418WH00	001	39730	2,4-D UG/L	UG/L	0.100 <	10.000		
418WH00	002	39760	SILVEX UG/L	UG/L	0.050 <	10.000		
418WN00	001	46313	PHORATE UG/L	UG/L	0.050 <			
418WN00	002	39570	DIAZINON UG/L	UG/L	0.050 <			
418WN00	003	39357	RONNEL UG/L	UG/L	0.050 <			
418WN00	004	39600	METHYL PARATHION UG/L	UG/L	0.050 <			
418WN00	005	82088	TERBUFOS (COUNTER) UG/L	UG/L	0.050 <			
418WN00	006	81294	DYFONATE UG/L	UG/L	0.050 <			
418WN00	007	81403	DURSBAN UG/L	UG/L	0.050 <			
418WN00	008	39530	MALATHION UG/L	UG/L	0.050 <			
418WN00	009	39398	ETHION UG/L	UG/L	0.050 <			
418WN00	010	81284	TREFLAN UG/L	UG/L	0.010 <			
418WN00	011	39630	ATRAZINE (AATREX) UG/L	UG/L	0.050 <			
418WN00	012	77825	ALACHLOR UG/L	UG/L	0.020 <			

FACILITY: 1050450 FORREST *** CONTINUED ***

418WN00	013	39356	METOLACHLOR (DUAL) UG/L	UG/L	0.100 <	
418WN00	014	81757	CYANAZINE UG/L	UG/L	0.050 <	

SAMPLE NO: D757240 LOCATION: FORREST #3
SMPL TYPE: RAW COLLECTOR: BORING
SMPL PURP: 5-SPEC/OTHR COMMENTS:
SMPL PROG: 0-GWM PEST OBSRVATNS:

COLL DATE: 07/01/87 DELIVERED BY:
LAB RCVD: 07/01/88 RECEIVED BY:
LAB COMPL: LAB SUPERVISOR:
SMPL PERIOD: 07/88 FUND CODE: PW30

ANALYSIS ID	RSLT NO	STORET NO	DESCRIPTION	UNITS	RESULT	STANDARDS DRINK WTR	STANDARDS RAW WTR	TRIGGER LEVEL
		39300	P,P'-DDT UG/L		0.010 <			
		39305	O,P'-DDT UG/L		0.010 <			
		39310	P,P'-DDD UG/L		0.010 <			
		39315	O,P'-DDD UG/L		0.010 <			
		39320	P,P'-DDE UG/L		0.010 <			
		39327	O,P'-DDE UG/L		0.010 <			
		39330	ALDRIN UG/L		0.010 <		1.000	
		39340	LINDANE UG/L		0.010 <		4.000	
		39348	ALPHA CHLORDANE UG/L		0.010			
		39356	METOLACHLOR (DUAL) UG/L		0.100 <			
		39357	RONNEL UG/L		0.050 <			
		39370	TOTAL DDT UG/L		0.000		50.000	
		39380	DIELDRIN UG/L		0.010 <		1.000	
		39390	ENDRIN UG/L		0.010 <		0.200	
		39398	ETHION UG/L		0.050 <			
		39400	TOXAPHENE UG/L		1.000 <		5.000	
		39410	HEPTACHLOR UG/L		0.010 <		0.100	
		39422	HEPTACHLOR EPOXIDE UG/L		0.010 <		0.100	
		39480	METHOXYCHLOR UG/L		0.050 <		100.000	
		39516	TOTAL PCB'S UG/L		0.010 <			
		39530	MALATHION UG/L		0.050 <			
		39570	DIAZINON UG/L		0.050 <			
		39600	METHYL PARATHION UG/L		0.050 <			
		39630	ATRAZINE (AATREX) UG/L		0.050 <			
		39730	2,4-D UG/L		0.100 <		10.000	
		39760	SILVEX UG/L		0.500 <		10.000	
		39810	GAMMA CHLORDANE UG/L		0.013			
		46313	PHORATE UG/L		0.050 <			
		72037	PUMPING RATE GPM		270.000			
		77825	ALACHLOR UG/L		0.020 <			
		81234	TREFLAN UG/L		0.010 <			
		81294	DYFONATE UG/L		0.050 <			
		81403	DURSBAN UG/L		0.050 <			
		81757	CYANAZINE UG/L		0.500 <			
		82088	TERBUFOS (COUNTER) UG/L		0.050 <			

SAMPLE NO: Z001903 LOCATION: WELL
SMPL TYPE: RAW COLLECTOR: IEPA SMPL COLLECTOR
SMPL PURP: 5-SPEC/OTHR COMMENTS:

COLL DATE: 03/27/86 DELIVERED BY:
LAB RCVD: 00/00/00 RECEIVED BY:
LAB COMPL: 00/00/00 LAB SUPERVISOR:

FACILITY: 1050450 FOREST *** CONTINUED ***

SMPL PROG: B-GWM ...T OBSRVATNS: SMPL PERIOD: 03/86 FUND CODE:

ANALYSIS ID	RSLT NO	STORET NO	DESCRIPTION	UNITS	RESULT	STAND DRINK WTR	STAND RAW WTR	TRIGGER LEVEL
0000001	001	39023	PHORATE UG/L		0.050 <			
0000001	002	39300	P,P'-DDT UG/L		0.010 <			
0000001	003	39305	O,P'-DDT UG/L		0.010 <			
0000001	004	39310	P,P'-DDD UG/L		0.010 <			
0000001	005	39315	O,P'-DDD UG/L		0.010 <			
0000001	006	39320	P,P'-DDE UG/L		0.010 <			
0000001	007	39327	O,P'-DDE UG/L		0.010 <			
0000001	008	39330	ALDRIN UG/L		0.010 <	1.000		
0000001	009	39340	LINDANE UG/L		0.010 <	4.000		
0000001	010	39380	DIELDRIN UG/L		0.010 <	1.000		
0000001	011	39390	ENDRIN UG/L		0.010 <	0.200		
0000001	012	39398	ETHION UG/L		0.050 <			
0000001	013	39400	TOXAPHENE UG/L		1.000 <	5.000		
0000001	014	39410	HEPTACHLOR UG/L		0.010 <	0.100		
0000001	015	39420	HEPTACHLOR EPOXIDE UG/L		0.010 <	0.100		
0000001	016	39480	METHOXYCHLOR UG/L		0.050 <	100.000		
0000001	017	39516	TOTAL PCB'S UG/L		0.100 <			
0000001	018	39530	MALATHION UG/L		0.050 <			
0000001	019	39570	DIAZINON UG/L		0.050 <			
0000001	020	39600	METHYL PARATHION UG/L		0.050 <			
0000001	021	39730	2,4-D UG/L		0.100 <	10.000		
0000001	022	39760	SILVEX UG/L		0.050 <	10.000		
0000001	023	39810	GAMMA CHLORDANE UG/L		0.010 <			
0000001	024	81...	DYFONATE UG/L		0.050 <			
0000001	025	81403	DURSBAN UG/L		0.050 <			
0000001	026	82088	TERBUFOS (COUNTER) UG/L		0.050 <			
0000001	027	00010	WATER TEMPERATURE DEG C		11.500			
0000001	028	00053	FLOW (PUMPING) RATE GAL/MIN		270.000			
0000001	029	00090	OXIDATION-REDUCTION POTENTIAL (EH) MILLIVOLTS		122.000-			
0000001	030	00400	PH PH UNITS		7.200			
0000001	031	72004	FLOW (PUMPING) TIME PRIOR TO SAMPLING MIN		140.000			
0000001	032	90410			532.000			

SAMPLE NO: B605435 LOCATION: WELL #3 COLL DATE: 04/18/86 DELIVERED BY:
SMPL TYPE: RAW COLLECTOR: NO NAME LAB RCVD: 05/28/86 RECEIVED BY:
SMPL PURP: 1-ROUTINE COMMENTS: LAB COMPL: LAB SUPERVISOR:
SMPL PROG: I-GWM INORG OBSRVATNS: SMPL PERIOD: 04/86 FUND CODE:

ANALYSIS ID	RSLT NO	STORET NO	DESCRIPTION	UNITS	RESULT	STANDARDS DRINK WTR	STANDARDS RAW WTR	TRIGGER LEVEL
		00095	CONDUCTIVITY(EC)-LAB(UMHOS/CM @ 25 C		780.000			
		00403	PH LABORATORY UNITS		7.600			
		00410	ALKALINITY,TOTAL MG/L AS CACO3		399.000			
		00...	NITROGEN,AMMONIA TOTAL MG/L AS N		4.900			

FACILITY: 1050450 FORREST *** CONTINUED ***

00630	NITRATE & NITRITE TOTAL MG/L AS N	0.100	<	10.000
00720	CYANIDE,TOTAL MG/L AS CN	0.005	<	0.200
00900	HARDNESS,EDTA MG/L AS CACO3	365.000		
00916	CALCIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP	77.000		
00927	MAGNESIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP	39.100		
00929	SODIUM,TOTAL RECOVERABLE MG/L AS NA ANAL BY ICP	35.000		
00937	POTASSIUM,TOTAL RECOVERABLE MG/L AS K ANAL BY ICP	1.900		
00940	CHLORIDE,TOTAL MG/L AS CL	8.200		
00945	SULFATE,TOTAL MG/L AS SO4	42.000		
00951	FLUORIDE,TOTAL MG/L AS F	0.340		4.000
00956	SILICA,TOTAL MG/L AS SIO2	15.000		
01002	ARSENIC,TOTAR RECOVERABLE UG/L AS AS	1.000	<	50.000
01007	BARIUM,TOTAL RECOVERABLE UG/L AS BA ANAL BY ICP	231.000		1000.000
01012	BERYLLIUM,TOTAL RECOVERABLE UG/L AS BE ANAL BY ICP	0.500	<	
01022	BORON,TOTAL RECOVERABLE UG/L AS B ANAL BY ICP	220.000		
01027	CADMIUM,TOTAL RECOVERABLE UG/L AS CD ANAL BY ICB	3.000	<	10.000
01034	CHROMIUM,TOTAL RECOVERABLE UG/L ASCR ANAL BY ICB	5.000	<	50.000
01037	COBALT,TOTAL RECOVERABLE UG/L AS CO ANAL BY ICP	5.000	<	
01042	COPPER,TOTAL RECOVERABLE UG/L AS CU ANAL BY ICP	5.000	<	5000.000
01045	IRON,TOTAL RECOVERABLE, UG/L AS FEANAL BY ICP	2800.000		1000.000*
01051	LEAD,TOTAL RECOVERABLE UG/L AS PB	5.000	<	50.000
01055	MANGANESE,TOTAL RECOVERABLE UG/L AS MN ANAL BY ICP	36.000		150.000
01067	NICKEL,TOTAL RECOVERABLE UG/L AS NI ANAL BY ICP	3.000	<	
01077	SILVER,TOTAL RECOVERABLE UG/L AS AG ANAL BY ICP	5.000	<	50.000
01082	STRONTIUM,TOTAL RECOVERABLE UG/L AS SR ANAL BY ICP	670.000		
01087	VANADIUM,TOTAL RECOVERABLE UG/L ASV ANAL BY ICP	4.000	<	
01092	ZINC,TOTAL RECOVERABLE UG/L AS ZN ANAL BY ICP	63.000		5000.000
01105	ALUMINUM,TOTAL RECOVERABLE UG/L ASAL ANAL BY ICP	5.000	<	
01147	SELENIUM,TOTAL RECOVERABLE UG/L ASSE	1.000	<	10.000
70300	RESIDUE,TOTAL FILTERABLE @180 C,MG/L	456.000		
70304	TOTAL DISSOLVED SOLIDS MG/L BY EC	470.000		
71900	MERCURY,TOTAL UG/L AS HG	0.010	<	2.000

SAMPLE NO: Z001902 LOCATION: WELL
SMPL TYPE: RAW COLLECTOR: IEPA SMPL COLLECTOR
SMPL PURP: 5-SPEC/OTHR COMMENTS:
SMPL PROG: I-GWM INORG OBSRVATNS:

COLL DATE: 03/27/86 DELIVERED BY:
LAB RCVD: 00/00/00 RECEIVED BY:
LAB COMPL: 00/00/00 LAB SUPERVISOR:
SMPL PERIOD: 03/86 FUND CODE:

ANALYSIS ID	RSLT NO	STORET NO	DESCRIPTION	UNITS	RESULT	STANDARDS DRINK WTR	STANDARDS RAW WTR	TRIGGER LEVEL
0000001	001	00610	NITROGEN,AMMONIA TOTAL MG/L AS N		8.800			
0000001	002	00630	NITRATE & NITRITE TOTAL MG/L AS N		0.100 <	10.000		
0000001	003	00665	PHOSPHORUS, TOTAL MG/L AS P		0.520			
0000001	004	00720	CYANIDE,TOTAL MG/L AS CN		0.010 <	0.200		
0000001	005	00916	CALCIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP		82.000			
0000001	006	00927	MAGNESIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP		40.000			
0000001	007	00929	SODIUM,TOTAL RECOVERABLE MG/L AS NA ANAL BY ICP		64.000			
0000001	008	00937	POTASSIUM,TOTAL RECOVERABLE MG/L AS K ANAL BY ICP		2.400			
0000001	009	00940	CHLORIDE,TOTAL MG/L AS CL		6.000			

FACILITY: 1050450 FORREST *** CONTINUED ***

0000001	010	00945	SULFATE,TOTAL MG/L AS SO4	10.000	<	
0000001	011	00951	FLUORIDE,TOTAL MG/L AS F	0.360		4.000
0000001	012	00956	SILICA,TOTAL MG/L AS S102	19.000		
0000001	013	00956	SILICA,TOTAL MG/L AS S102	8.800		
0000001	014	01002	ARSENIC,TOTAR RECOVERABLE UG/L AS AS	1.000	<	50.000
0000001	015	01007	BARIUM,TOTAL RECOVERABLE UG/L AS BA ANAL BY ICP	297.000		1000.000
0000001	016	01012	BERYLLIUM,TOTAL RECOVERABLE UG/L AS BE ANAL BY ICP	0.500	<	
0000001	017	01022	BORON,TOTAL RECOVERABLE UG/L AS B ANAL BY ICP	294.000		
0000001	018	01027	CADMIUM,TOTAL RECOVERABLE UG/L AS CD ANAL BY ICB	3.000	<	10.000
0000001	019	01034	CHROMIUM,TOTAL RECOVERABLE UG/L ASCR ANAL BY ICB	5.000	<	50.000
0000001	020	01037	COBALT,TOTAL RECOVERABLE UG/L AS CO ANAL BY ICP	5.000	<	
0000001	021	01042	COPPER,TOTAL RECOVERABLE UG/L AS CU ANAL BY ICP	7.000		5000.000
0000001	022	01045	IRON,TOTAL RECOVERABLE, UG/L AS FEANAL BY ICP	3525.000		1000.000*
0000001	023	01051	LEAD,TOTAL RECOVERABLE UG/L AS PB	5.000	<	50.000
0000001	024	01055	MANGANESE,TOTAL RECOVERABLE UG/L AS MN ANAL BY ICP	39.000		150.000
0000001	025	01067	NICKEL,TOTAL RECOVERABLE UG/L AS NI ANAL BY ICP	5.000	<	
0000001	026	01077	SILVER,TOTAL RECOVERABLE UG/L AS AG ANAL BY ICP	3.000	<	50.000
0000001	027	01082	STRONTIUM,TOTAL RECOVERABLE UG/L AS SR ANAL BY ICP	753.000		
0000001	028	01087	VANADIUM,TOTAL RECOVERABLE UG/L ASV ANAL BY ICP	5.000	<	
0000001	029	01092	ZINC,TOTAL RECOVERABLE UG/L AS ZN ANAL BY ICP	50.000	<	5000.000
0000001	030	01105	ALUMINUM,TOTAL RECOVERABLE UG/L ASAL ANAL BY ICP	50.000	<	
0000001	031	01147	SELENIUM,TOTAL RECOVERABLE UG/L ASSE	1.000	<	10.000
0000001	032	32730	PHENOLS, TOTAL RECOVERABLE UG/L	5.000	<	
0000001	033	70300	RESIDUE,TOTAL FILTERABLE 3180 C,MG/L	516.000		
0000001	034	71900	MERCURY,TOTAL UG/L AS HG	0.010	<	2.000
0000001	035	00010	WATER TEMPERATURE DEG C	11.500		
0000001	036	00059	FLOW (PUMPING) RATE GAL/MIN	270.000		
0000001	037	00090	OXIDATION-REDUCTION POTENTIAL (EH) MILLIVOLTS	122.000-		
0000001	038	00400	PH PH UNITS	7.200		
0000001	039	72004	FLOW (PUMPING) TIME PRIOR TO SAMPLING MIN	140.000		
0000001	040	90410		532.000		

SAMPLE NO: Z001901 LOCATION: WELL COLL DATE: 03/27/86 DELIVERED BY:
SMPL TYPE: RAW COLLECTOR: IEPA SMPL COLLECTOR LAB RCVD: 00/00/00 RECEIVED BY:
SMPL PURP: 5-SPEC/OTHR COMMENTS: LAB COMPL: 00/00/00 LAB SUPERVISOR:
SMPL PROG: V-VOC OBSRVATNS: SMPL PERIOD: 03/86 FUND CODE:

ANALYSIS ID	RSLT NO	STORET NO	DESCRIPTION	UNITS	RESULT	STANDARDS DRINK WTR	STANDARDS RAW WTR	TRIGGER LEVEL
0000001	001	32101	BROMODICHLOROMETHANE UG/L CG/MS		1.000 <			
0000001	002	32102	CARBON TETRACHLORIDE UG/L CG/MS		1.000 <	5.000		
0000001	003	32103	1,2-DICHLOROETHANE UG/L		1.000 <	5.000		
0000001	004	32104	BROMOFORM UG/L CG/MS		1.000 <			
0000001	005	32105	DIBROMOCHLOROMETHANE UG/L GC/MS		1.000 <			
0000001	006	32106	CHLOROFORM UG/L GC/MS		1.000 <			
0000001	007	34010	TOLUENE UG/L		1.000 <			
0000001	008	34030	BENZENE UG/L		1.000 <	5.000		
0000001	009	34301	CHLOROBENZENE UG/L		1.000 <			
0000001	010	34371	ETHYLBENZENE UG/L		1.000 <			

FACILITY: 1050450 FORREST *** CONTINUED ***

0000001	011	34423	METHYLENE CHLORIDE UG/L	1.000	<	
0000001	012	34475	TETRACHLOROETHYLENE UG/L GC/MS	1.000	<	
0000001	013	34496	1,1-DICHLOROETHANE UG/L GC/MS	1.000	<	
0000001	014	34501	1,1-DICHLOROETHYLENE UG/L GC/MS	1.000	<	7.000
0000001	015	34506	1,1,1-TRICHLOROETHANE UG/L GC/MS	1.000	<	200.000
0000001	016	39180	TRICHLOROETHYLENE UG/L	1.000	<	5.000
0000001	017	00010	WATER TEMPERATURE DEG C	11.500		
0000001	018	00059	FLOW (PUMPING) RATE GAL/MIN	270.000		
0000001	019	00090	OXIDATION-REDUCTION POTENTIAL (EH) MILLIVOLTS	122.000-		
0000001	020	00400	PH PH UNITS	7.200		
0000001	021	72004	FLOW (PUMPING) TIME PRIOR TO SAMPLING MIN	140.000		
0000001	022	90410		532.000		

APPENDIX E

Illinois
Environmental
Protection Agency

Office of Chemical Safety
2200 Churchill Road, P.O. Box 19276
Springfield, Illinois 62794-9276

IEPA/ENV/87-001-2 March, 1987

- CHLORDANE -

CHEMICAL INFORMATION SHEET*

WHAT IS CHLORDANE?

Chlordane is a broad spectrum insecticide which has been used extensively over the past 40 years for termite control, for general insect control in homes and gardens, and for control of soil insects in the production of crops such as corn. Both the uses and production volume of chlordane have decreased substantially as a result of the Environmental Protection Agency's Registration Suspension Notice (40 FR 34456 Aug. 15, 1975). The suspension forbids the use of chlordane on all food crops and for general insecticidal use around homes and gardens. However, significant commercial use of chlordane for termite control continues because there is no effective substitute. At present, federally registered products containing chlordane are available for purchase by homeowners and licensed applicators for underground termite control only. Any other use by a homeowner or applicator is a violation of Federal and State law.

WHAT IS THE OCCURRENCE OF CHLORDANE IN THE ENVIRONMENT?

There are no known natural sources of chlordane. Its presence in the environment is due to extensive production and use over the past decades which led to widespread environmental dissemination and the subsequent contamination of soil, water, and air. Chlordane has been detected in milk, meat, fish, and humans.

Chlordane is highly persistent in the environment because it binds tightly to the soil, migrates very slowly, is insoluble in water, and is relatively impervious to chemical and biological breakdown. Residues of chlordane have been known to persist for 10-20 years in the soil. Chlordane accumulates in the body fat of living organisms, and can therefore become concentrated in the food chain.

The most significant avenue of human exposure to chlordane is from fish consumption. Recent health advisories recommended against the consumption of certain fish species because of the high levels of chlordane found in their flesh. In 1986, health advisories for limited fish consumption were issued for Lakes Michigan, Springfield, Decatur, Taylorville, Clinton, Paris Twin, and the Mississippi River. Where chlordane has been present in waters and sediment for some time, larger fish are more likely to have higher chlordane levels than smaller fish due to their extended exposure period. Fish are tested annually for the presence of certain chemical residues and appropriate health advisories are issued by the Illinois Fish Contamination Monitoring Program.

The program is a cooperative effort between the Department of Agriculture, the Department of Conservation, the Illinois Environmental Protection Agency, and the Department of Public Health.

WHAT ARE THE HEALTH EFFECTS OF CHLORDANE EXPOSURE?

Chlordane can be absorbed into the body via the lung, gastrointestinal tract, and through the skin. It has been estimated that the fatal oral dose for adults lies between 6 and 60 grams (approximately 1 1/3 to 12 2/3 teaspoons) with onset of symptoms within 45 minutes to several hours after ingestion. Chlordane exerts its toxic effects on the central nervous system. Symptoms include convulsions, dizziness, headache, disorientation, weakness, apprehension, excitability, nausea, and vomiting. Blood diseases associated with dermal or inhalational exposure to chlordane have been reported at unspecified exposure levels.

Carcinogenic effects on humans are uncertain due to limited data. In studies conducted by the National Cancer Institute, chlordane was found to cause liver tumors in mice. The applicability of mouse liver tumors for assessing cancer risk to humans is disputed; however, US EPA considers the evidence sufficient to consider chlordane a probable human carcinogen.

HOW IS CHLORDANE REGULATED?

Threshold limit values adopted by the American Conference of Governmental Industrial Hygienists refer to airborne concentrations of substances and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect. The threshold limit value for chlordane is 0.03 ppm as an average eight hour exposure for a 5-day workweek. Action levels for poisonous or deleterious substances are established by the Food and Drug Administration (FDA) to control levels of contaminants in human food and animal feed and represent limits at or above which FDA will take legal action to remove contaminated products from the market. Based on EPA's recommendation, FDA guidelines provide an action level of 0.3 ppm for chlordane in freshwater fish. US EPA has established a recommended action level of 0.1 ppm for chlordane residues in various fruits and vegetables commonly produced and consumed in Illinois. Illinois' regulations set a limit of .003 ppm chlordane in finished water for public water supplies. The National Academy of Sciences has recommended an interim guideline for indoor levels of chlordane in houses at 5 ug/m^3.

CS:st:1351g,1-2sp

* Note: This information sheet is a summary of readily available data regarding the general nature and effects of this chemical. The reader is encouraged to consult other sources or an appropriate professional if a more detailed explanation for specific concerns is desired.

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the State of Illinois
Job #16566 5/87 500

APPENDIX F

Illinois
Environmental
Protection Agency

Office of Chemical Safety
2200 Churchill Road, P.O. Box 19276
Springfield, Illinois 62794-9276

IEPA/ENV/87-001-6 April, 1987

- GLOSSARY -
CHEMICAL INFORMATION SHEET

absorption - the movement of a chemical into the bloodstream or other body fluid or tissue after its entrance into the body through the skin, lungs, or gastrointestinal tract.

acute - sharp, severe; having a relatively rapid onset, often with severe symptoms and a relatively short course. In toxicology refers to a single large exposure to a chemical (acute exposure), or to the development of symptoms of poisoning soon after a single exposure to a substance (acute toxicity).

ACGIH - the American Conference of Governmental Industrial Hygienists. It recommends upper limits (see TLV) for exposure to workplace chemicals.

bioconcentration - the process in and by which chemical substances are accumulated in living organisms above their concentration in the environment. For example, a chemical is spilled into a river or lake and is ingested and stored by small organisms like plankton; small fish eat the plankton; and large fish eat the smaller fish. As this process occurs, the chemical becomes thousands of times more concentrated in the tissues of the large fish than in the plankton or the water. Usually occurs with fat-soluble compounds rather than water-soluble compounds.

biodegradation - the breaking down of an organic substance, resulting from the complex action of living organisms.

cancer - a group of diseases characterized by malignant, uncontrolled growth of cells of body tissue (tumors).

carcinogen - a term applied generally to any substance that is capable of producing cancer or increasing the growth and spreading of tumors in an organism.

chronic - occurring over a period of time. In toxicology refers to repeated exposure (chronic exposure) to a chemical for a relatively long period of time or persistence of symptoms or disease over a long period of time (chronic toxicity).

epidemiology - the study of the incidence, distribution, and control of disease in human populations.

leaching - downward movement of a material in solution through soil.

Maximum Contaminant Level (MCL) - the maximum permissible level of a contaminant that is allowed in a public water supply system.

metabolism - the changes that a chemical undergoes in an organism. The products of metabolism may be more or less active in the organism than the original (parent) compound. In animals, many of these products find their way to body excretions, for example through lung exhalation, urine, or feces. Tracing the pathways of metabolism is important to shed light on possible relationships between chemicals and particular health effects.

mg/m^3 - means milligrams of a chemical in a cubic meter of air. It is a density measurement expressing the amount of air pollutant in a given volume of air.

mutagen - a substance that causes a change in the genetic material in a body cell, called a mutation. Mutations may lead to birth defects, miscarriages, or cancer, or they may have no obvious effect, depending on what genetic material is damaged and on where the damage occurs.

persistent - existing for a long time in the environment or the body. For chemicals, this means not easily broken down; for the effects of chemicals, this means the effect remains or recurs long after exposure to the chemical.

pesticide - a general term used to describe a product designed to kill or control unwanted organisms; for example, herbicides are designed to control unwanted plants, insecticides are designed to control unwanted insects, fungicides are designed to control fungus and mold, etc.

ppb - an expression describing a small concentration, equal to an amount of one substance in a billion parts of another material; for example, one drop of alcohol in 16,000 gallons of water.

ppm - an expression describing a small concentration, equal to an amount of one substance in a million parts of another material; for example, one drop of alcohol in 16 gallons of water.

solvent - a liquid substance capable of dissolving or dispersing one or more other substances.

teratogen - a substance that causes stillbirths, birth defects, or malformations by affecting the growing fetus.

TLV - is the Threshold Limit Value for air. The TLV is a workplace exposure limit recommended by ACGIH and represents conditions under which it is believed that nearly all workers may be repeatedly exposed to a substance day after day without adverse effect.

toxicology - the study of the adverse effects of chemicals on living organisms.

volatile - readily vaporizable at a relatively low temperature.

CS:ba/sp2116g/1-2

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the State of Illinois
Job #16717 7/87 500

AAMS EXCURSION OF OZONE NAAQS REPORT

1992 OZONE EXCURSIONS (DAYS ≥ 125PPB)

DATE	LOCATION	CONCENTRATION	COMMENTS
Jun 13, 1992	Calumet City	126 ppb	1st Excursion
Jun 13, 1992	Elgin	128 ppb	1st Excursion
Jun 13, 1992	Lemont	131 ppb	1st Excursion
Jun 13, 1992	Waukegan	149 ppb	1st Excursion
Jul 1, 1992	Chicago-University	133 ppb	1st Excursion
Jul 1, 1992	Deerfield	127 ppb	1st Excursion
Jul 1, 1992	Des Plaines	134 ppb	1st Excursion
Jul 1, 1992	Evanston	129 ppb	1st Excursion
Aug 9, 1992	Evanston	135 ppb	2nd Excursion

UNHEALTHFUL PSI DAYS WITHOUT OZONE EXCURSION (120 < value < 125)

Jun 13, 1992	Evanston	121 ppb
Jul 1, 1992	Chicago-Taft	122 ppb
Jul 1, 1992	Cicero	122 ppb
Jul 1, 1992	Libertyville	122 ppb

OZONE ADVISORIES ISSUED

Jun 13, 1992	AQCR 67 (Chicago)	3pm CDT	Waukegan	149 ppb
Jul 1, 1992	AQCR 67 (Chicago)	3pm CDT	Deerfield	127 ppb

UPDATED 9/4/92

FOR FURTHER INFORMATION CONTACT BOB SWINFORD

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